DOCUMENT RESUME

ED 340 012 CS 010 793

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TITLE Learning about Frogs: An Integrated Curricular Unit.
INSTITUTION North Dakota Univ., Grand Forks. Center for Teaching and Learning.
PUB DATE Jan 92
NOTE 17p.; Printed on colored paper; photograph on cover page will copy poorly.
PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052) -- Collected Works - Serials (022)
JOURNAL CIT Insights into Open Education; v24 n5 Jan-Feb 1992

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Childrens Literature; Class Activities; *Content Area Reading; Grade 2; Integrated Curriculum; Primary Education; *Science Instruction; *Thematic Approach; Units of Study; *Writing Assignments
IDENTIFIERS *Frogs

ABSTRACT

This integrated curricular unit on frogs, developed for the second grade, focuses primarily on integrating reading, writing, and science. The unit discusses introducing students to frogs, predicting results in science, learning about classification in science, reading factual science books, extending the topic into literature and the arts, additional writing activities, and learning skills. Ten figures are included; a list of 9 references for teachers, 32 items of children's literature, and 4 stories taken from old reading textbooks are attached. (RS)

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CENTER FOR TEACHING AND LEARNING
UNIVERSITY OF NORTH DAKOTA
GRAND FORKS 58202

Volume 24, Number 5
January/February 1992

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INSIGHTS into open education

Learning About Frogs: An Integrated Curricular Unit

by

Rosemary Hoberg
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Donna Plante

We are both second grade teachers who have planned and shared ideas and materials for many years. Over the years, our focus has changed from the isolated teaching of traditional subject areas to an integrated curriculum. Instead of teaching fragmented concepts and skills through the use of worksheets and workbooks, we now teach thematic units, incorporating reading, writing, science, math, social studies, and art throughout the theme.

The thematic unit on frogs that follows is an example of our integrated curriculum. In this unit, we focus primarily on integrating reading, writing, and science.

Introducing the Frog Unit

We begin the unit by displaying live frogs in an aquarium in the classroom. This year we have a wood frog, a leopard frog, a tree frog, and a fire bellied toad. We observe the frogs' behaviors and appearances. This stirs children's interest and prompts lively discussions of frogs. As each child relays familiar frog facts, observations done of frogs in the classroom, or stories about frogs, it naturally leads us into charting facts we already know (see Figure 1)! Next to each charted fact is written the name of the child who contributes it. This brainstorming activity assesses the children's knowledge, builds enthusiasm, and begins to build conceptual background and vocabulary necessary for subsequent reading and learning in the unit.

Frogs: What We Think We Know

Rachel	1. Frogs can hop.
Keith	2. Frogs eat flies.
Ashley	3. They like water.
Sean	4. When they become frogs their old skin splits and they eat it. The new skin is underneath.
Jessica	5. There are tree frogs and river frogs.

Figure 1

There is no attempt at this time to correct children's facts. If children disagree with each other, the ideas of both are recorded. As a class, we decide we need to read to find out which facts are true. Throughout the unit we review this chart often. Accurately recorded information is circled and misinformation is corrected.

Predictions in Science

After introducing the unit, children are then invited to write down questions about frogs they would like to have answered as they read, write, and learn. This is an excellent opportunity to simultaneously work on sentences that tell or ask. Children have to use prior knowledge to formulate questions and organize thoughts. The questions are glued on a large paper. Blank lines are drawn underneath each question. After the questions are researched, the answers are written on the blank lines (see Figure 2).

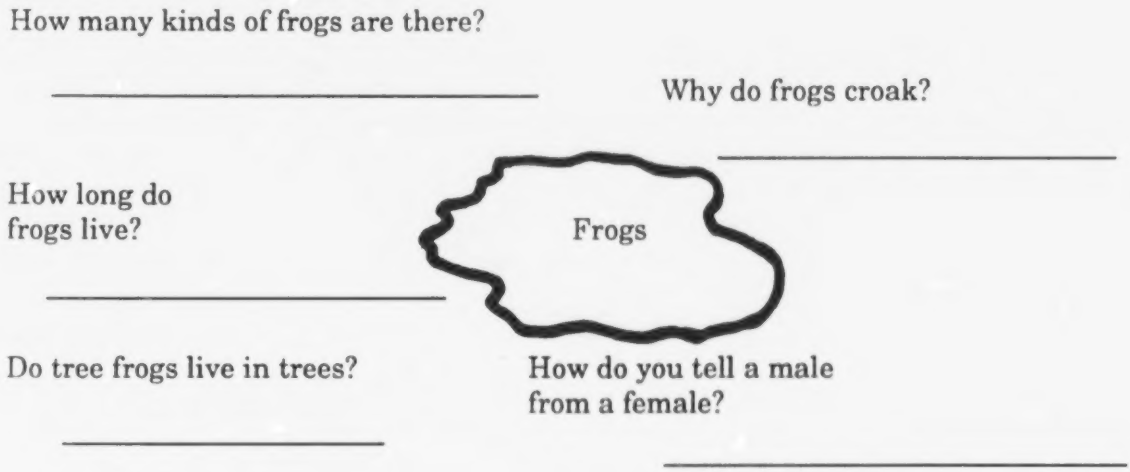
How many kinds of frogs are there?
Why do frogs croak?
How long do frogs live?
Frogs
Do tree frogs live in trees?
How do you tell a male from a female?

Figure 2

This chart is displayed for future reference. Posters, books, charts, poems, and photographs complete the display. Each child also has her own frog book of poems and songs.

Learning About Classifications in Science

The book, *Benny's Animals* by Millicent Selsam, is then read to the entire class. A discussion on how and why animals are classified in particular groups in science follows. This unit is the first unit of the year on animals, and is used to provide background not only for this unit, but for the subsequent animal units throughout the year. Animals are a large part of the second grade science curriculum.

After re-reading the book and further discussion we construct a chart illustrating the classification of animals. This chart helps the children to see graphically where the animal groups are in relation to each other. It also helps the children identify and organize the information on different animals that they will learn about in subsequent lessons (see Figure 3).

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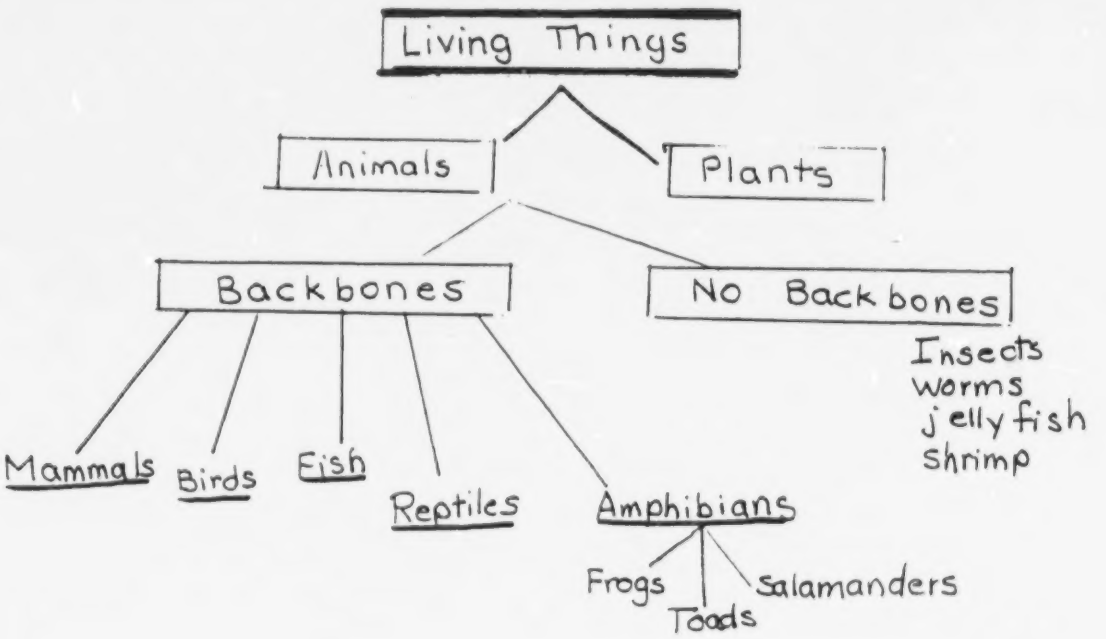


Figure 3

After reading, charting, and categorizing animals in general, we move to categorizing the specific animal group, amphibians. The children read the science book chapter on amphibians through a guided reading format. We again chart the main facts throughout our reading. We also organize our facts through semantic webbing. As children recall specific facts about amphibians, the teacher records them appropriately on the web (see Figure 4).

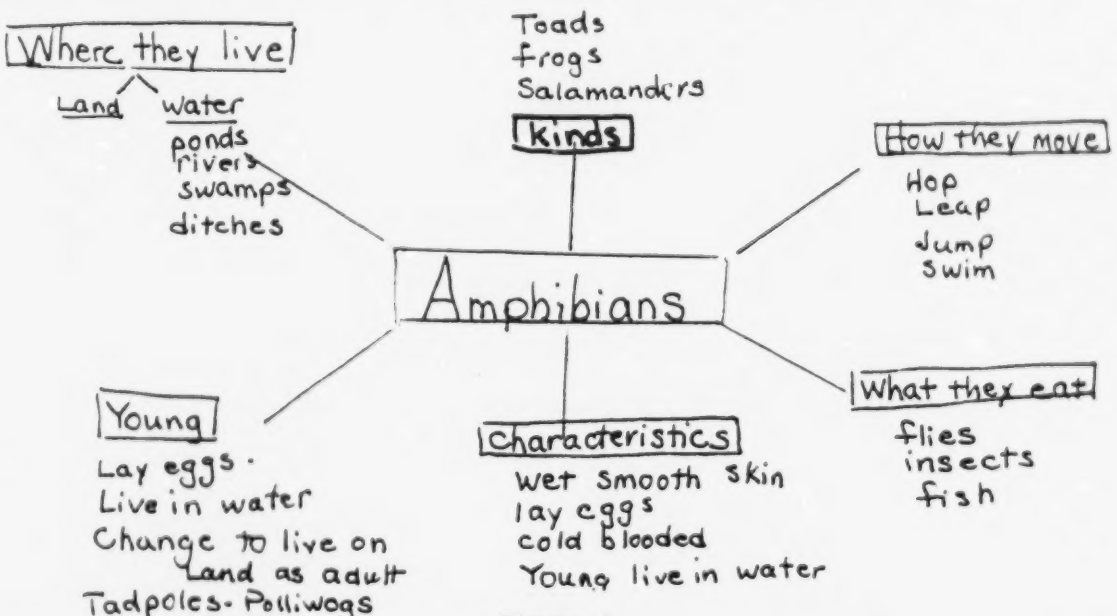


Figure 4

Reading Factual Science Books

The big book, *Tadpole Diary* by David Drew, is shared and read to the class and discussed. This book highlights the developmental stages of the frog's life cycle. The follow-up activity involves illustrating and describing these stages on four pieces of paper. These pages are then assembled into a little booklet to be shared at home (see Figure 5). The children also simultaneously work on sequencing and writing skills.

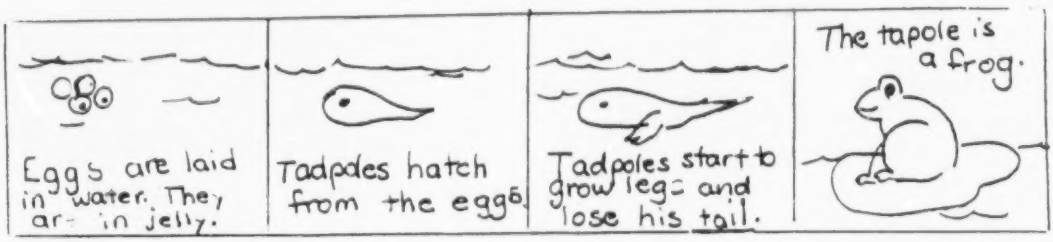

Eggs are laid in water. They ar- in jelly.
Tadpoles hatch from the eggs.
Tadpoles start to grow legs and lose his tail.
The tapole is a frog.

Figure 5

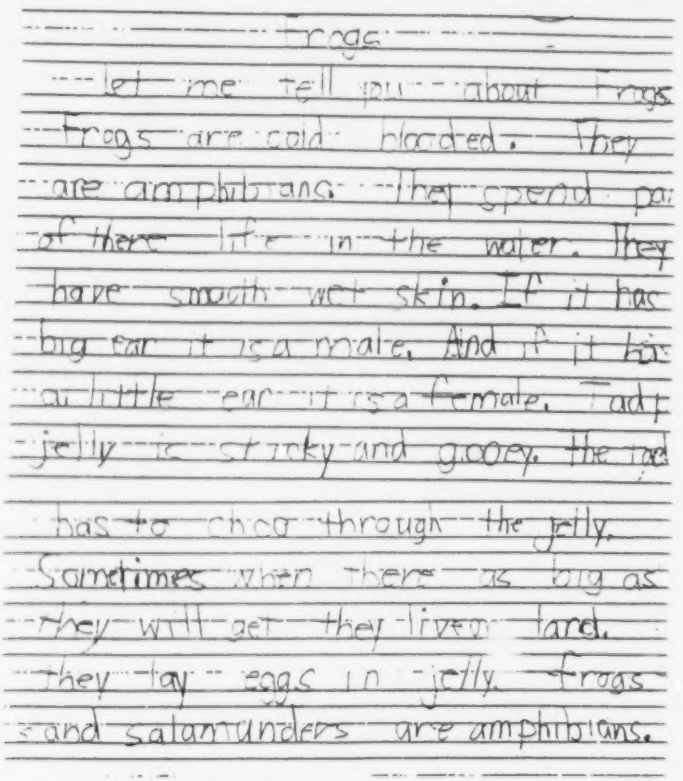
In order to continue to learn more about frogs, multiple copies of the book, *What is a Frog?* by G. Darby, are distributed to the students. We chart predictions based on the title and pictures. Because the children now have adequate background, they are asked to do silent reading. A cloze procedure (see Figure 6) is used to assess comprehension at the completion of the book. The children are allowed to go back to the text for re-reading if necessary. This activity also encourages the use of context clues when reading.

ex.
1. Frogs are in the animal group _____.
2. Frogs' eggs are laid in _____.
3. Frogs eat _____and _____.
4. In the winter frogs _____.
5. The skin of a frog is _____ and _____.

Figure 6

Any answer that makes sense is accepted. As we share answers, children often discuss how they use sentence clues to find answers that make sense.

The children then have an opportunity to organize their own thoughts by responding in their journals. Children use journals to both summarize facts after reading non-fiction books and to respond to literature (which is read later in the unit). The following journal entry reflects one child's efforts to summarize everything he knows up to this point.


Frogs
let me tell you about Frogs
Frogs are cold blooded. They
are amphibians. They spend pa
of there life in the water. They
have smooth wet skin. If it has
big ear it is a male. And if it has
a little ear it is a female. Tadp
jelly is stricky and gooey. the tad
has to chog through the jelly.
Sometimes when there as big as
they will get they liveon land.
they lay eggs in jelly. frogs
and salamanders are amphibians.

The observations, reading, writing, discussion, and charting enable children to learn a lot about frogs. They are now equipped to handle a more independent research project. The term research is introduced by writing it down and underlining the word "search." We then brainstorm about all possible sources of information on frogs, ending up with the following list (see Figure 7).

Research: Where do we *search*
for information on frogs?

1. Books
2. Tapes, movies, filmstrips
3. Posters, pictures
4. People who are frog experts
5. By watching real frogs

Figure 7

Various books on frogs and amphibians are available for selection. Children work with partners and choose and read a book together. While the children are reading in pairs we circulate among the groups and notice the students' reading strategies. Working together,

children figure out their own system for reading unknown words. Children are also given chart paper and markers for recording pertinent information to bring back to the rest of the class. After sharing their papers, they are displayed and previous facts are checked for accuracy against the new ones.

Another factual book, *I Can Read About Frogs and Toads* by Ellen Shultz, is also shared with the children after they finish their research reports. The reading and discussion of this book gives the children an opportunity to bring facts they have gained in their independent reading into whole class discussion. We also use this time to chart differences between frogs and toads on a large (18 x 12) sheet of construction paper (see Figure 8).

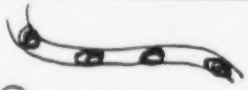
Frog		Toad
Leap	Move	Hop
Long Lean	Body	Fat-Round
Smooth	Skin	Bumpy
Tadpole	Young	Polliwog
Clumps	Eggs	 Strings

Figure 8

A large bulletin board depicting life "Down At the Pond" is one of the final activities rich with student drawings of pond life, including frogs. Each child decides where her contribution should be placed. Each child is also responsible for writing one sentence stating a fact about frogs which is displayed with her item.

The factual aspect of the unit is completed by having the children read a teacher-made expository text containing the facts researched by the children in their readings. Sentences for the book are taken from the charts completed by children. The book is printed and distributed so each child has a booklet about frogs that they can easily read. These are read silently at school, shared, and read at home.

Extending into Literature and the Arts

Extension of a factual topic such as frogs into the realm of literature and the arts allows for utilization of the factual concepts learned, enhancement of our lives by adding meaning to our life experiences, and enrichment of language. In addition, nurturing a love of literature and self expression are primary considerations in the development of proficient readers and writers. By exposing children to a variety of genre within a unit, we heighten their awareness of themselves and their world.

The Frog and Toad books by Arnold Lobel are read and discussed first. There are five books in this series, all dealing with the adventures of two good friends. The conceptual background developed in the first part of the unit has already developed a base for enjoyment of these books. After reading *Frog and Toad Are Friends* with the tape, the children select another book in the series to read with a partner. After becoming familiar with his books, children listen to a taped interview with Arnold Lobel.

The theme of friendship is emphasized in these Frog and Toad books. Additional books on the friendship topic are also shared, read, and discussed. *Best Friends* by Steven Kellogg, *We Are Best Friends* by Aliki, and *Rosie and Michael* by Judith Viorst are just some of the books shared. Children are able to describe and relate the friendships developed in the fictional books to their own lives.

The Frog Prince, a Grimm's Fairy Tale, is also read and children work in small groups to dramatize the major events. Children are allowed either to use puppets or act themselves. Other versions of the fairy tale, including the video, are also read or viewed and we use a graphic organizer to compare and contrast versions (see Figure 9).

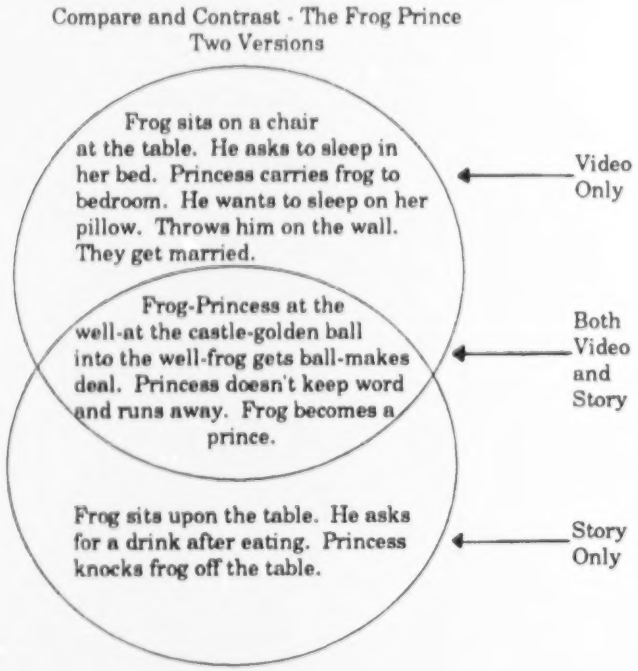

Compare and Contrast - The Frog Prince
Two Versions
Frog sits on a chair at the table. He asks to sleep in her bed. Princess carries frog to bedroom. He wants to sleep on her pillow. Throws him on the wall. They get married.
Video Only
Frog-Princess at the well-at the castle-golden ball into the well-frog gets ball-makes deal. Princess doesn't keep word and runs away. Frog becomes a prince.
Both Video and Story
Frog sits upon the table. He asks for a drink after eating. Princess knocks frog off the table.
Story Only

Figure 9

Jump Frog Jump by Robert Kalan, *Frog and Her Dog* by James Marshall, *Surprise Day at School* by William Durr, and *Frog Goes to Dinner* by Mercer Mayer are a few of the additional fictional stories read and shared within this unit. (See bibliography at the end of this article for a list of additional literature books.)

Finally, songs, poems, and chants are also read in our unit. The book and tape *The Foolish Frog* by Pete Seeger, is shared. Its lively banjo music heightens interest and we often sing the song from the chart. Other poems and songs are chanted or sung to obtain and maintain interest. We have found that children respond very well to music. We try to incorporate it into all of our units. The melody and rhythm carry the children through the selection as reading rate and fluency are practiced.

Additional Writing Activities

In addition to the charting, factual writing, and journal writing, the children are also engaged in a variety of meaningful writing activities developed as an extension of literature. The children write letters in which they pretend to be Frog trying to cheer up Toad after reading the story, "The Letter," in *Frog and Toad Are Friends*. Children also complete a dialogue journal assuming the role of Frog or Toad and correspond with each other on paper. Some children even create an original story line. An excerpt from one journal follows.

Frog: Toad, I see you look so sad today. What's the problem?
Toad: I can't figure out how to play this new game.

We also write a class letter to Arnold Lobel sharing our thoughts and feelings about his books, and the children write their own stories about a friend following our reading of books on friendship.

Several writing activities involve adaptations of existing children's literature books. We write an adaptation of Bill Martin Jr.'s book *Brown Bear, Brown Bear, What Do You See?*, titled *Green Frog, Green Frog*. The books are cut into the shape of a frog and children draw on the repetitive pattern to create a book of their own dealing with animals one might see at a pond. The children also write individual texts for Mercer Mayer's wordless book, *Frog Goes to Dinner*. They share their version and we talk about similarities and differences in the texts. After reading the big book, *Cat and Mouse* by Jill Eggleton, small groups of children then choose another character to interact with a frog. The predictable pattern (e.g., "The mouse went up. The cat went up.") provides a safe, successful format for story writing. Children also illustrate their book when completed.

Learning Skills

Many traditional reading skills are incidentally developed in this unit. The charting, webbing, and other graphic organizers help children identify main ideas. A laminated chart (such as the one in Figure 10) is used with several fictional books to teach story grammar and help comprehension.

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10

Story Grammar

Title _____
Author _____

Setting
Time _____
Place _____

Characters _____
_____
_____

Goal _____
Problem _____
Adventures
1. _____
2. _____
3. _____
Solution _____

Figure 10

The reading of *Cat and Mouse*, as well as the writing of the adapted text, provides an excellent opportunity to work on prepositional phrases (e.g., under, over, around). We discuss the "where" words children use in their own adaptation. Describing words are identified while writing observations of frogs. A movie is shown to heighten our awareness of words that describe. We also learn a song about a frog that has a lot of describing words.

Vocabulary development is an important objective in the unit. Word cards are made of new vocabulary and are displayed in the room. Words are grouped according to the types of words (e.g., naming, doing, describing), are sorted by word parts (e.g., syllables), and are grouped according to similar graphophonemic parts (e.g., A B C order). Children may use these words in their sentences. Sentences are also written on strips and cut apart. The children work with partners to reassemble them in the pocket chart.

The children work on sequencing the cumulative story pattern of *Jump Frog Jump*. The story is written out and cut into sections. Groups of three or four have to create a poster depicting their stage of the story. The posters and story parts are assembled and displayed together.

To reinforce the strategy of using preceding and following context for clues in unlocking unknown words, masking is done. Sticky note cards are used on big books and children predict and confirm unknown words.

Closing

During the last time we taught this unit, one of our students remarked to his mother that the best thing about second grade was that there was no work! Interestingly, he viewed reading real books, locating facts, participating in charting, writing (in forms of keeping a journal, notetaking, letters, lists, stories, etc.), and sharing and listening to stories as no work. The

meaningful activities associated with learning about frogs were viewed as natural ways of learning about the real world. His writing was simply his method of communicating ideas. Focus was on meaning, and skills were seen as tools to help create meaning.

Over the years we have seen tremendous growth in children's self concept, as well as in reading and writing, as we've adopted the thematic approach to teaching. We feel one of the dramatic changes has been a change of focus from the negative to the positive. We used to scrutinize every worksheet and correct every error. Students spent much time doing and correcting pages. The skill became the end in itself. Its purpose in the *whole* picture got lost. It seemed the best teachers had the most groups and spent most of their time making or correcting seatwork.

We now feel that if each child sees herself as a successful reader and writer she *will* be one. By developing meaningful, purposeful activities she is able to maintain her focus on meaning. By emphasizing the positive, what the child can do, she is not discouraged but encouraged.

A unit such as this one allows for differences in learning styles, abilities, and interests more easily than other types of programs. Children are engaged by real reading and by writing with a purpose.

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